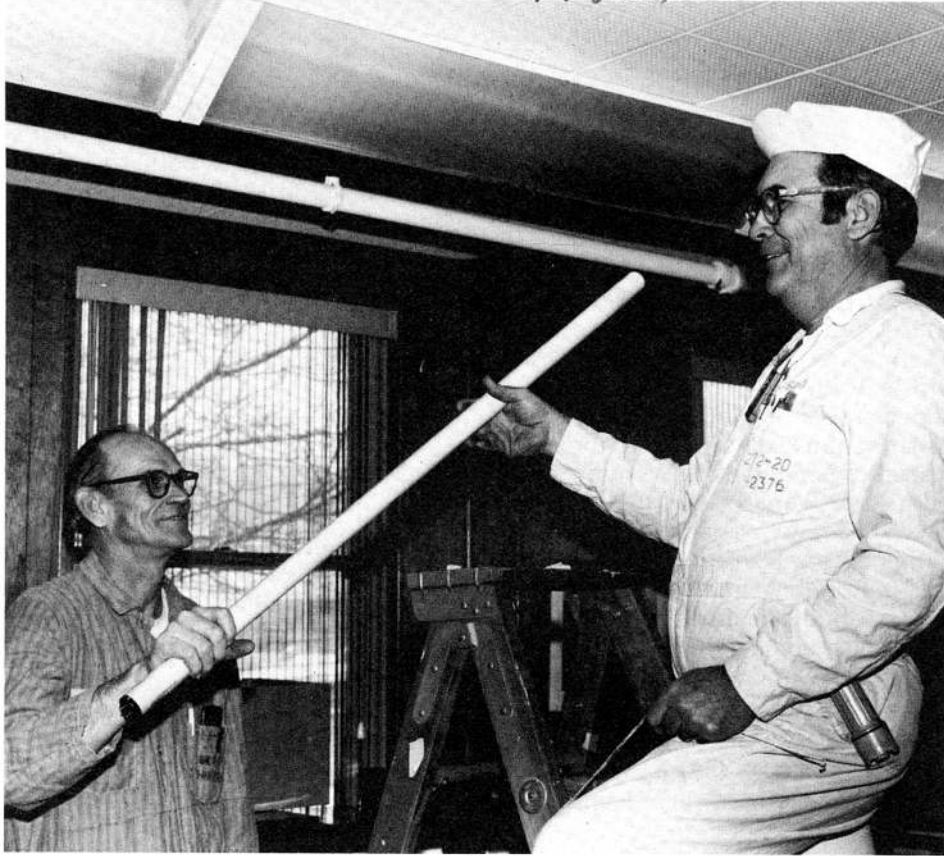


## The Answer Box...

# What are you doing to ease the energy crunch?



Electricians Wolfe and Phillips

## New benefits book coming

The Corporate Benefit Plans Department of Union Carbide Corporation has released two new booklets describing the Group Insurance Plan and the Health Care and Disability Plans. They were described in the February, 1978 issue of **Union Carbide World**.

Nuclear Division employees will receive these booklets, along with a binder for all benefit plan booklets, in April.

The plans described in the booklets have not been changed, but new booklets were required by federal regulations. The new booklets include additional information about claim procedures, rights of participants and government file numbers. The Health Care and

Disability Benefits booklet brings together, for the first time, information about several related plans designed to provide protection in this important area.

Later this year, new booklets will be published for the Savings Plan and Pension Plan. These are being rewritten to provide answers to the questions most often asked and to explain other parts of the plans more fully. The timing of the distribution is uncertain because the booklets cannot be released until after review of the plans by the Internal Revenue Service.

During this year, new booklets on the Hospital-Surgical, Major and Special Medical Plans will also be issued.

## in this issue.



"Super T" Tommy Lee, ORGDP's Engineering Mechanics Department, writes of his "different drummer" interest in autocrossing. That's a fancy word for obstacle running in an auto, with safety one of the prime factors, of course. "Super T's" story is on page four.

Other features:

- Question Box.....page 3
- Y-12 promotions.....page 3
- Fusion development.....page 5
- ORGDP promotions.....page 5
- Medicine Chest.....page 7
- Credit Unions stage annual meetings..... page 8

The energy crunch. It's in the news constantly, particularly with the record coal miners' strike. There are dozens of ways to cut down the use of energy, and a cross-section sampling of Nuclear Division employees has some interesting results. From solar homes to simple reductions of thermostats, from wood-burning stoves to dishwashers with the cycle cut down (eliminating the drying part), it runs the gamut.

And how are you conserving energy?

Here are some of the unique ways your fellow employees are doing it:

Last November **Phil Parrett**, ORGDP Employment Division, decided he had enough of cold nights when the electrical power failed. One night, Parrett slept in a sleeping bag near the fireplace in order to keep the fire going.

He decided it was time to do something about heating his 2,800-square-foot basement rancher. Parrett purchased a \$500 deluxe woodburning stove for his basement. The fireplace was sealed off with galvanized sheet metal. A hole was placed in the sheet metal for venting the stove. The heat radiates easily throughout the house, with a comfortable 70 degrees daytime, and 65 degrees at night.

He installed the unit himself and used it part of December, but almost exclusively in January and February when he discovered his heat pump was not working.

Parrett estimates he saved \$200 on heating during this extremely cold period. In addition to saving a lot of money on heating, he says additional savings are possible by cooking on the stove.

Parrett, who cuts his own wood, says it takes about three ricks per month. He says he is "pleased with the unit and the warmth it provides. And there is no maintenance!"

\*\*\*

**Brenda Gouldy** of ORGDP Maintenance firmly believes "that



one of the best things has been the use of a heat pump in our 1,800-square-foot-home." She says her electric bills have been averaging \$20-\$50 a month less than some of her neighbors.

Other things she has been doing include turning back the thermostat, doing cold water washes, using the dishwasher less and utilizing the fireplace for additional heat.

\*\*\*

**Bill Simon**, ORGDP Operations, is in the process of adding insulation to his home. He says it is too early to determine the savings, but believes the savings will soon turn up.

Simon says he has a central heating system, but is giving consideration to installing a heat pump this summer and adding a woodburning stove before the next heating season. As for now, he has reduced the thermostat in his home and closed off unused rooms.

\*\*\*

**Sue Kelly**, Industrial Participation at ORGDP, says she has done a number of things to reduce energy consumption at her home over the past few months. Kelly says she washes full loads of clothes, uses the clothes dryer less, hangs some things to dry, turns the thermostat down, turns off unnecessary lights, utilizes the oven more efficiently, uses less hot water and has eliminated the dishwasher drying cycle.

It is still a bit early to estimate the savings, but it is obvious, says Kelly "that energy use at our house has declined."

\*\*\*

No survey on energy would be complete without a response from **John Moyers**, director of ORNL's Energy Conservation Laboratory. At home Moyers practices what he preaches in four main ways:

"1) On mornings TVA was suffering during "peak demand periods," I turned my water heater off; thus, reducing TVA's load by 4-1/2 kilowatt

(Please turn to page 2)



5-8371



**OUT OF THE PAST**—Leo F. Hemphill, standing by rail, welcomes W. Douglas Lavers and his family aboard the Freedom Train which visited Oak Ridge in 1948. Lavers was Y-12 plant superintendent at the time, and Hemphill was grand marshal for the train bearing the nation's vital, treasured documents. Hemphill, who was just voted the Jaycee of the year, has long been active in civic affairs. He celebrates his 35th anniversary with Union Carbide this month, and has elected early retirement.

## The energy crunch

(Continued from page 1)

hours; 2) In addition to having good home insulation, I have insulated our hot water heater for a savings of 450 kilowatt hours per year; 3) I've added storm windows to our home, and 4) We practice "night set back" with our thermostat." He adds: "our family has also switched to economy cars—we now drive two small autos."

\*\*\*

**Vivian Pai**, Computer Sciences at ORNL, is another firm believer in thermostat setbacks. "During the day, ours stays at 55—and at nights, even lower." Her husband, **Bob**, works in ORNL's Health and Safety Research Division.

\*\*\*

**Barbara White**, a secretary in ORNL's Central Management Office, is another energy-saving convert. "I've added glass screens to all my fireplaces and have closed off six rooms that are not in use."

\*\*\*

**Howard R. Phillips**, Y-12 Electrical, says he has cut the heat pump thermostat at home back to 65 degrees. "We also installed a wood-burning stove in the basement, for which I cut wood. My wife cooks pinto beans, cornbread fritters, apples and potatoes on it...right back to good old country cooking. This saves a lot on our electricity bill." The Phillips live at Route 4, Kingston.

\*\*\*

**Walter Wolfe Jr.**, Y-12 Electrical, was part of the crew taking down lights recently in the plant. He says they have ceil heat at their Route 1, Luttrell home, and wherever a room is not in use, they just cut the heat off.

"You have to leave heat on where there's plumbing involved, however," he said, "and those rooms remain heated at a bare level to prevent freezing."

\*\*\*

**Vernell Moore**, Employee Relations at ORNL, has conquered two energy-wasting habits: "I used to have a tendency to leave lights on when rooms were not in use—now I'm more sensitive to this problem and retrace my steps when I forget." She also waits for a full load before washing clothes.

\*\*\*

**Howard Ross**, PGDP Power Utilities and Chemicals, reduces heat in two bedrooms at home and has installed smaller watt light bulbs.

\*\*\*

**Ed Kincer**, Fabrication and Maintenance at Paducah, has installed a wood-burning stove, which reduced his power bill by 50 percent during January's freezing temperatures. He predicts that in two years he will have recovered his investment. At work, his department turns off welding machines during shift changes and lunch hours.

\*\*\*

Another Paducah employee practicing energy conservation at work and at home is **Jesse Shelbourne**, Technical Services Division. She's a faithful "light switcher; and always turns off hoods when they're not needed in the lab."

\*\*\*

A different form of energy conservation is practiced by **Jeff Vandeven**, Plant Engineering Division

## anniversaries...

### Y-12 PLANT

35 Years



**Leo F. Hemphill** assumed in early 1943 he was going to work for Tennessee Eastman in Rochester. Instead he was sent to California for special training and ended up on the Manhattan Project. He had the oldest earned badge in Y-12, number 54, until we went to the new badging system a few years ago. He is in Y-12's Engineering Division.

Hemphill, a graduate of Armour Tech, Illinois Institute of Technology, has elected early retirement this month. He and his wife, Elinor, have five children. They live at 75 Outer Drive, Oak Ridge.

30 YEARS

**Ben L. Hammer**, Engineering Division.

25 YEARS

**Chester R. Rea Jr.**, **Conie F. Jenkins**, **Jerry Lambdin**, **Maggie K. Martin**, **Roy H. Gilbert**, **Earl C. Farris**, **Lenley A. Brown**, **Howard G. Watkins** and **Paul D. Deniston**.

at PGDP. He has rechanneled the warm air discharged from his clothes dryer into his house. "To catch lint, I've made a little dust-catching filter."

At work Vandeven's department, as do most in the Nuclear Division, turns out all all lights except those necessary for safety.

### ORNL

30 YEARS

**Robert J. Gray**, Metals and Ceramics; **Ralph O. Payne**, Chemical Technology; **Lowell M. Foust**, Plant and Equipment; **Raymond L. Burnett**, Plant and Equipment; and **Charles A. Mossman**, Instrumentation and Controls.

25 YEARS

**Richard A. Crowell**, **Alvin P. Callahan**, **Theodore F. Sliski**, **Charles H. Helton**, **Seldon R. Bernard**, **William Zacchi**, **Ralph H. Guymon** and **Virgil R. Bullington**.

20 YEARS

**Sally S. Stockstill** and **Herman Postma**.

### PADUCAH

25 YEARS

**Linda E. Carrigan**, **John C. Bruce**, **William M. Moffitt**, **Eugene F. Speer**, **Russell I. Giltner**, **William H. Meriwether**, **Joe G. Moseley Jr.**, **Roby C. Kight Jr.**, **Lloyd H. Sheehan**, **Cecil H. Tilford** and **William E. Anderson**.

### ORGDP

30 YEARS

**Martha B. Arp** and **Jessie B. Arnold**, Purchasing Division.

25 YEARS

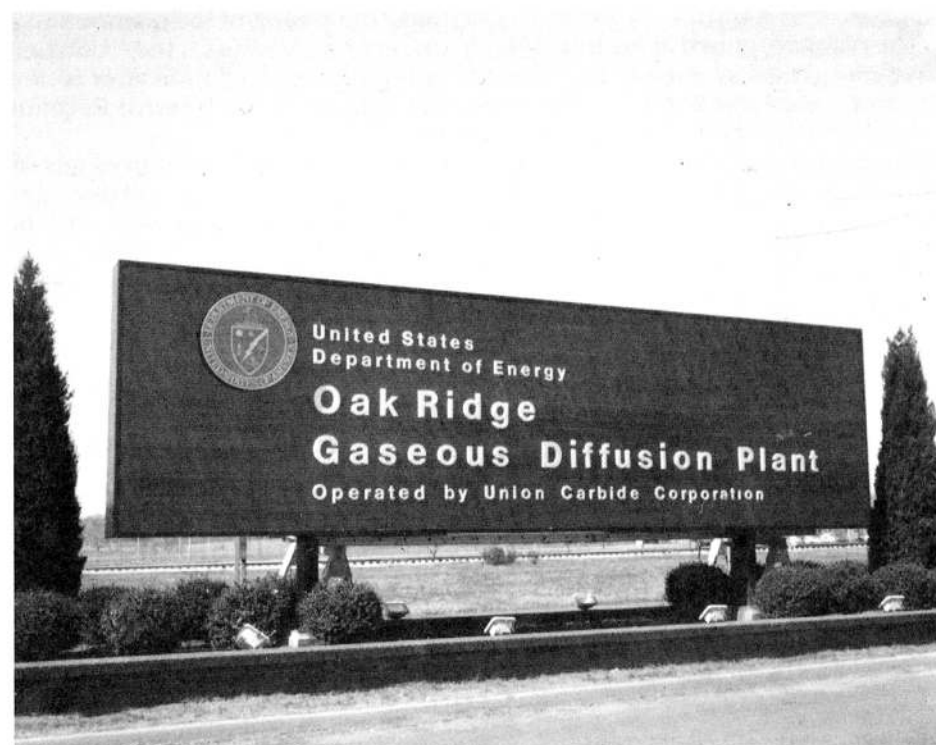
**James D. Drake** and **Harry B. Pruden Jr.**



To **Harry C. Fischer**, ORNL, for "Bidirectional Piston Valve."

To **Othar K. Tallent**, ORNL, for "Method for Dissolving Plutonium Dioxide."

To **John D. Sease** and **Walter J. Lackey Jr.**, both of ORNL, for "Process to Minimize Cracking of Pyrolytic Carbon Coatings."



Carpenters and painters from the Maintenance Division at ORGDP were busy just before the start of the Easter holiday installing the new United States Department of Energy sign. The new sign, visible from Highway 58 at the Portal 2 entrance, features the standard DOE deep blue background with white lettering and official agency emblem. Energy sources depicted on the emblem are electricity, nuclear, sun, wind and oil.



## question box...

If you have questions on company policy, write the Editor, **Nuclear Division News** (or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

### Battery availability

**QUESTION:** Since Union Carbide is known as the "Battery Company," isn't it a little odd that smoke detectors are available in the Company store at ORGDP and not the necessary batteries?

**ANSWER:** Carbide's Eveready batteries are available for smoke detectors currently offered through all COMPANY STORES. Your question probably refers to smoke detectors we carried a few years back. The manufacturer of SmokeGARD 700A, which was sold in stores prior to March 1976, recommends the use of a Mallory PX-21 battery in their smoke detector. Eveready battery No. 523, which is now carried in Company stores, is the Eveready equivalent of the Mallory PX-21 and will, according to our Battery Division, satisfactorily and safely operate the SmokeGARD 700A smoke detector.

### Road conditions

**QUESTION:** Each of the plants has an excellent safety program of which most employees are very proud. Off-the-job accidents have been stressed during the past several months. Considering this, it seems that more emphasis should have been placed on the de-icing of the plant parking lots and the west end of Bear Creek Road. The parking lots at Y-12 received very little attention, and Bear Creek Road west of U. S. Nuclear, Inc., was not touched. Can this situation be corrected next winter by whoever is responsible for the maintenance of these areas?

**ANSWER:** Weather conditions were such during the storm preceding this question that it was believed that attempts to remove packed snow at Y-12 by scraping would result in a hazardous icy surface and there was not sufficient supply of salt on hand to treat these parking lot areas. When temperature conditions permitted satisfactory removal, the snow and ice were scraped from parking areas. Nuclear Division management is concerned with the snow removal from parking areas and will take practical steps to have this done.

We share your concern about Bear Creek Road. The portion that is maintained by DOE contractors was cleared. The section you noted west of U. S. Nuclear is the responsibility of the city of Oak Ridge. Since this is an alternate route, the city does not give snow removal its priority.

It is important that each of us recognize that natural phenomena which create safety problems are

beyond the control of us and, in the last analysis, the most important thing that each of us can do is to exercise proper caution, be alert, and conscious of the fact that our safety rests primarily in our own hands, not in the hands of others.

### Architect-engineer work

**QUESTION:** With the extensive engineering departments in the Nuclear Division, why is it necessary to turn so many projects over to architect-engineers? By the time each discipline has made its contributions, the job is probably 80 percent close to being ready for construction. Why pay twice for the same work?

**ANSWER:** The engineering workload at the plants is subject to significant changes and is particularly affected by large projects. It is the policy of DOE to hire architect-engineers to design most large projects. They allocate work between Union Carbide and architect-engineers on a project-by-project basis. In general, the architect-engineer prepares construction drawings and specifications based on design criteria prepared by Union Carbide. The work that is performed by Union Carbide depends on the complexity of the design work required and on the availability of Carbide engineers. The Carbide work usually amounts to between 20 percent and 40 percent of the total design effort. For Nuclear Division Engineering to perform total engineering, we would periodically need a considerably increased work force; and, in turn, this would result in very unstable employment.

As to paying twice for the same work, we do not. We have followed literally hundreds of jobs, of all types and sizes, in which outside architect-engineers have participated; and there is, in fact, little duplication of effort.

### Wage levels

**QUESTION:** As an employee of the Equipment Test and Inspection Department Technical Division, ORGDP, I would like to know why inspectors and senior inspectors are kept at wage levels that are in some cases lower than the crafts. We were told when we accepted these positions that we would not lose money by the move, but would be kept slightly above the crafts we came out of.

**ANSWER:** Pay practices for hourly employees and for salaried employees have been explained in general terms in this column several times before. In order to fully explain specific questions such as this one, we suggest you discuss your situation with your supervisor and/or the Salary Administrator at ORGDP.

## Y-12 Maintenance promotions



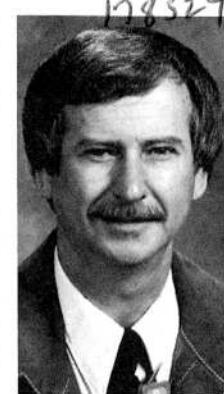
Evensen



Green



Hopwood



Rider



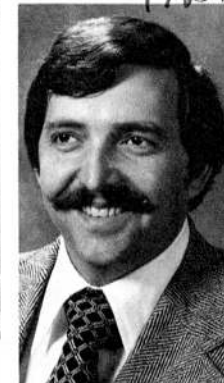
Sharna



Smith



Tassey



Twitty Hopwood

The Maintenance Division in Y-12 has announced eight promotions. Thomas G. Evensen, Dennis E. Sharna, Jerry W. Hopwood and David R. Smith have been named planner-estimators in Electrical; Vernon W. Tassey has been promoted to a planner-estimator in Heavy Equipment Maintenance; and Jack R. Rider Jr., Phillip W. Twitty and Charles E. Green have been named planner-estimators in Research Services.

Evensen, a native of Detroit, is a 10-year veteran of Union Carbide. He attended an electronics school while in the U. S. Navy. He and his wife, the former Barbara Yearwood, live at Route 7, Martel East, Lenoir City. They have a daughter, Michelle.

Green was born in Old Fort, Tenn., and is a graduate of the Industrial Electronics School. He has been at Y-12 for 11 years and before that worked with Automatic Canteen Company and the American Restaurant Association. Mrs. Green is the former

Phyllis Hughes. The Greens live at 125 Aspen Lane, Oak Ridge, and have two children, Charles and Kahra.

Hopwood, a native of Oak Ridge, worked as an electrician four years at ORNL and has been at Y-12 eight years. He is a graduate of the Fulton Vocation School. Mrs. Hopwood is the former Rita Smyth. The Hopwoods live in Oliver Springs and have two children, Channon and Sherry.

Rider was born in Riverside, Calif., and has been with Union Carbide almost two years. He and his wife, the former Kay L. Smith, live at Route 3, Kingston. They have two sons, Kurt and Kyle.

Sharna was born in St. Charles, Ill., and was with Robertshaw Controls, Lenior Industries and Honeywell before joining Union Carbide in 1976. He attended the aviation electronics school in the U. S. Navy, and holds AA and AAS degrees from DeVry Institute of Technology. His wife is the former Linda Boyer. The Sharnas live at 2126 Everett Road, Lenior City, and have a daughter, Sandy.

Smith was born in Petersburg, Tenn., and has attended the University of Oklahoma. He was in the U. S. Air Force before joining Union Carbide in 1970. Mrs. Smith is the former Fanny Burns and the couple lives at 198 Louisiana Avenue, Oak Ridge. They have two sons, David and Timothy.

Tassey is a native of Nashville, and worked with the Tennessee Valley Authority before joining Union Carbide in 1977. Mrs. Tassey is the former Barbara Whaley. The couple lives on Gamble Drive, Heiskell, with their three children, Terry, Chris and Traci.

Twitty is a native of Fayetteville, Tenn., and has attended the University of Tennessee and Roane State Community College. He joined Union Carbide 14 years ago. Prior to coming to Y-12, he worked with the Oak Ridge Utility District. Mrs. Twitty is the former Alice Moore and they live at 112 Oklahoma Avenue, Oak Ridge. They have two children, Mark and Pam.

### Blair Road signal

**QUESTION:** The improvements made on Highway 58 have created a hazard at the Blair Road-Turnpike intersection. Could a traffic engineer not make a study there to see if a light is needed. I have no problem getting off Blair Road, because I turn west toward ORGDP; but my wife works in Oak Ridge and turning east is murder.

**ANSWER:** Engineers from the State Regional Traffic Department evaluated the feasibility of installing traffic lights at the Blair Road-Oak Ridge Turnpike intersection about two years ago when the improvements to the Turnpike at that location were being planned. At that time they concluded that any advantages to having a traffic light operating during peak plant traffic periods would be more than offset by the undesirable and potentially unsafe effect at other times on through traffic using this state highway. Despite this finding, we agree that your suggestion is a good one and a request is being made again at this time for a study and/or the installation of a traffic signal.



*A different drummer. . .*

# 'Super T' wins year-end autocross trophy; aiming at 1978 coup

By  
Tommy A. Lee



**'Super T' Tommy Lee**

Autocrossing, also known as obstacle or slalom racing, is the timed competition of cars traveling in a short, tight circuit. This sport tests the driver's ability to make turns and maneuvers at high speeds, and also separates the good handling cars from the bad.

All cars are lined up in their respective classes. Each car gets three attempts to turn the course, and the car with the fastest time wins the class.

Contrary to appearances, autocrossing is basically not very hard on the car. The biggest punishment the car takes is on the tires. A set of 40,000 mile radials can quickly become a set of 10,000 mile slicks. I usually get about eight to ten autocrosses out of a set of tires.

Safety is always a number one concern at an autocross. No driver starts without a seat belt and helmet. Road courses are usually laid out with pylons (the cones construction workers use to mark off freshly painted center lines on highways) on an unused airstrip or parking lot. By using these pylons—rather than actual obstacles—a misjudgment by the driver means only lost time, not a demolished car or personal injury.

*'Safety. . . a number one concern at an autocross.'*

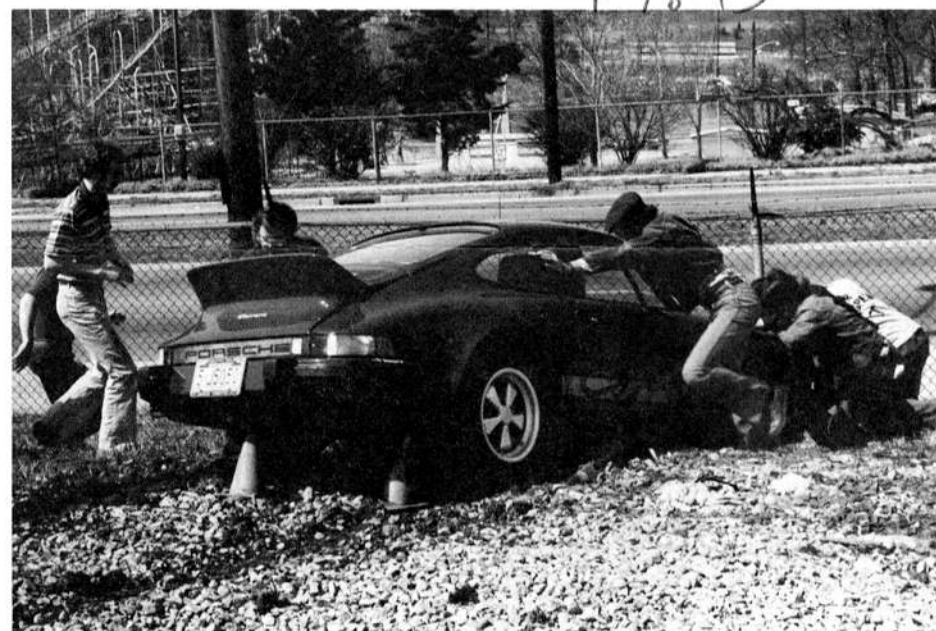
I began autocross racing in April, 1976, when some friends asked me to try it and see what it was like.

For that first race, I had a 1967 Camaro that I had owned for a short time. I can remember being very nervous. At the end of the racing, I was very happy with my second place finish.

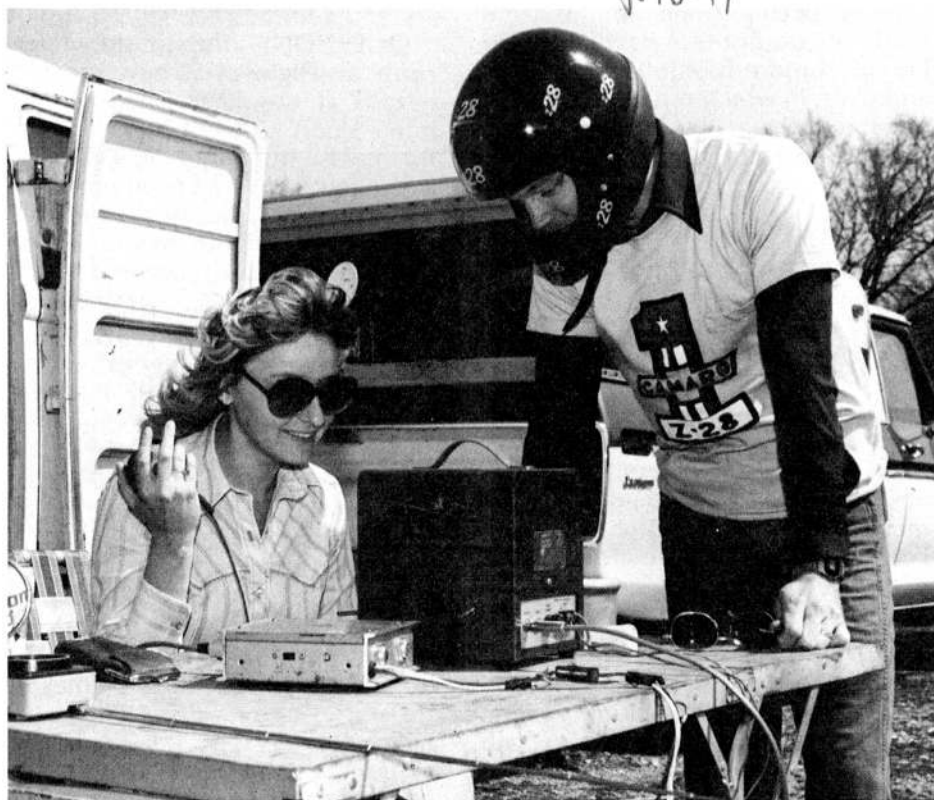
During my first year of racing, the announcers began introducing me as "Super T" Tommy Lee. The name has stuck with me, and today most of the people I race with know me as Super T.

*Road courses are laid out with pylons.*

Winnings for my first year of autocrossing included two second-place finishes, nine first-place finishes and the first-place, year-end trophy for class F/stock, which is all American V-8 sedans—Corvettes excluded.



**Lending a hand**



**'I can remember being very nervous'**

My second year of autocross racing got off to a discouraging start with a fourth-place finish. But after some kindly persuasion from a close friend, I went out the next five races and captured all first-place finishes. The first-place, year-end trophy was mine for the second consecutive year.

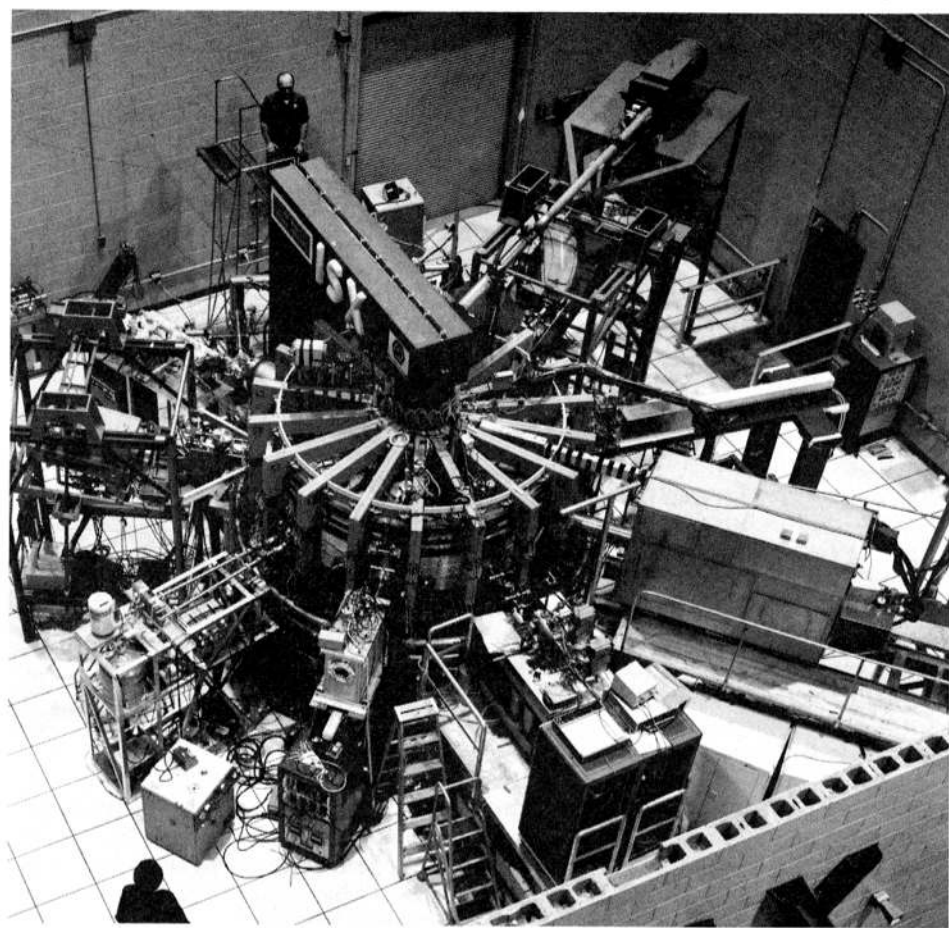
Half-way through my second season, I bought a new 1977 1/2 Z-28 Camaro, which helped me to compete in the last three races of 1977.

Now in the beginning of my third year of autocrossing, I have some high hopes. This year I intend to go to the national runoffs in Kansas; however, I first have to compete in the Southeastern Divisional races in Macon in order to qualify for the nationals.

At a recent autocross in Atlanta, Ga., I defeated the top Atlanta area drivers in my class by a respectable margin. I was very surprised with my first-place finish. I had expected to finish high, but not win. Hopefully, this will be a good indication of the year ahead.



# Fusion experiment called step toward working power reactors



'ISX' RUN SUCCESSFUL—ORNL's Impurity Study Experiment (ISX) concluded a three-month run in mid-March, yielding results with significant implications for future fusion power reactors. The experiment is now being modified to "ISX-B," and will resume operation later this summer.

An experimental fusion research device at ORNL has produced results with important implications for future fusion power reactors.

The Impurity Study Experiment (ISX), a collaborative project between Fusion Energy Division and the General Atomic Company of San Diego, was designed to study the role of impurities in fusion fuel that could keep fusion reactors from operating economically. ISX has produced several specific new developments since it went into full-scale operation in December, 1977:

- It has produced extremely long-lived plasmas for a device operating with a relatively low magnetic field. (A fusion plasma is the very high-temperature hydrogen gas made up of the particles to be fused—the "fuel" for future reactors.)

- It has obtained the highest energy efficiency (or plasma pressure, expressed by researchers as "beta") ever obtained in a fusion device with no supplementary heating. In a fusion reactor, the higher the beta, the greater will be the reactor's output power at a given magnetic field.

- It has demonstrated for the first time the ability to refuel a fusion device with hydrogen pellets, a technique that will be essential to the operation of fusion reactors.

- General Atomic researchers working on ISX successfully used an advanced new technique they have developed, called "impurity

flow reversal," to keep impurities out of the fusion plasma.

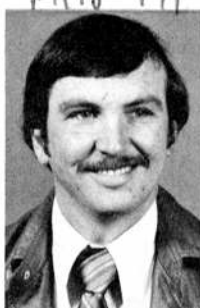
The harmful effects of impurities were clearly demonstrated during the ISX experiments when researchers injected atoms of tungsten into clean plasmas, causing the plasmas to deteriorate very rapidly.

ISX is now being modified to become "ISX-B" by the addition of powerful supplementary heating and the use of a specially shaped plasma. ISX-B, which will be an important step in establishing economic design standards for future fusion reactors, is scheduled to begin operation in August.

Project managers for ISX were Thomas Jernigan of Fusion Energy Division and Keith Burrell of General Atomic. Also involved in directing the ISX experimental program were ORNL researchers Dick Colchin, deputy project manager; Norm Durfee and Dave Lousteau, engineers; Masanori Murakami, physicist; and Phil Edmonds, experimental operations.

Fusion, the process by which the sun and stars generate energy, occurs when two nuclei of a light element are combined or fused to form the nucleus of a heavier element, a process that releases large amounts of energy. The development of fusion for electrical power production on earth would result in a virtually unlimited energy supply, since heavy hydrogen, the basic fuel for fusion, exists in great quantities in ordinary water.

## Named to posts at ORGDP



Hochanadel



Harshaw



Turner



Gann



Fitzgerald



Hummel



Hart

Several promotions have been announced at ORGDP. Richard J. Hochanadel and Jon W. Harshaw have been named building and grounds supervisors in the Fabrication and Maintenance Division; Guy Turner has been named a supervisor in Operations and Ray B. Gann, also of Operations, has been named health and safety officer. Other promotions include Robert L. Fitzgerald and James A. Hummel, who were named field quality representatives in Technical Services, and Len M. Hart, who was promoted to supervisor in the Separations Systems Division.

Hochanadel, an Oak Ridge native, was with Crouch & Adams

Engineering before joining Union Carbide in 1975. Hochanadel attended the University of Tennessee. He and his wife, Gail, live at 109 Kingfisher Lane in Oak Ridge. They have two children, Leigh and Bryan.

Harshaw, born in Middlesboro, Ky., joined Union Carbide 10 years ago. He is married to the former Geraldine Dibrell, also of Middlesboro. The Harshaws live at 3918 Porter Avenue in Knoxville with their three children, Victor, John and Robin. Harshaw attended Kentucky State University and Knoxville College.

Turner, a native of Haysi, Va., joined Union Carbide 33 years ago. He is married to the former Bessie

Sapp of Sparta. They have four children, Wendell, Donna, Melinda and Jennifer Delmonte. The Turners live at Route 2, Powell.

Gann, raised in Harriman, has been employed by Union Carbide for 19 years. He was with Kemp Engineering in Houston, Tex. before returning in 1976 to Union Carbide. Gann attended the University of Tennessee and Arnes Business College in Houston. He and his wife, Mary Belle, live at 1603 Shady Lane, Kingston. They have two children, Lyndia Grimes and Don.

Fitzgerald, a native of Celina, joined Union Carbide in 1946 and has worked at ORNL and more recently at Y-12. He attended Tennessee Technological University and Middle Tennessee State University. Fitzgerald is married to the former Christine Rose Keenan of Philadelphia, Pa. They have two children, Christine and Robert. The Fitzgeralds live at 103 Kimball Lane, Oak Ridge.

Hummel, born in Oak Ridge, worked at Y-12 before his promotion. He is married to the former Glenda Butler, also of Oak Ridge. The Hummels live at 160 North Purdue, Oak Ridge, with their two sons, Franklin and Alan.

Hart, a native of Oak Ridge, joined Union Carbide eight years ago. He attended David Lipscomb College and the University of Tennessee. Hart is married to the former Jacquelyn Smith, also of Oak Ridge. The Harts, who live at 101 Wheeler Drive, Oliver Springs, have three children, Amy, Len and Ashley.

wanted...



ORNL

CAR POOL MEMBER from West Haven Subdivision, Knoxville, to East Portal, 8-4:30. Debra Swaggerty, plant phone 3-1987, home phone 522-1834.

CAR POOL MEMBERS to share driving from West Hills or Deane Hill areas, Knoxville, to East Portal, 8-4:30. Chris Flanary or Mildred Gregg, plant phones 3-6366 and 3-1836, respectively.

CAR POOL from Emory Heights, Oak Ridge, to East Portal or East Parking Area, 8:15-4:45. Gerry Scott, plant phone 3-1922, home phone 482-4533.

RIDE OR JOIN CAR POOL from Lovell Road area, Knoxville, to East Portal, either shift. Linda Jeffers, plant phone 3-0264.

RIDER WANTED from Karns/Ball Camp area, Knoxville, to any portal, 8-4:30. Neil Griffith, plant phone 3-6422, home phone 690-1876.

Two RIDERS wanted from Cumberland Estates, Knoxville, via Oak Ridge Highway, to East, North or Central Portals, straight days. C. E. Spradlin, home phone, Knoxville, 584-7114; plant extension 3-7613.

Two CAR POOL MEMBERS from New York Avenue, Outer Drive and Pennsylvania Avenue area, Oak Ridge, to North Portal, straight day. R. T. Cantrell, plant phone 3-7382, home phone 483-1700.



# Bertini strikes again. . . . this time at frightened doe

by Hugo W. Bertini

ORNL Engineering Technology Division

The soft rustle of the leaves off to my left woke me out of my slumber. I was up in the Cumberland Mountains, and had been sitting in the forest for four hours, since 5:30 a.m., next to an old logging road waiting for a deer. It had been about 15°F when I had started out in the early morning blackness, and I was cold. But now, with the sun peeping through the trees, the temperature had risen to a more comfortable 16°. I had lain back while repeating, "stay alert, stay alert, stay...zzz," and thus had violated the oath of the scouts (or is it safety?—whatever!). The rustle however, brought me wide awake

instantly. While still lying down I turned my head and peered through the underbrush—and gasped. I could see several pair of brown legs; two deer! The rest of their bodies were obscured by the undergrowth. They were shuffling along slowly, grazing on nuts and clumps of grass, and occasionally yanking the ends off of small branches with their teeth. Unaware of danger, they were making a heck of a racket. Their course would cross the logging road about 30 yards in front of me—a perfect position—at last. I sat up quietly and thumbed the safety of my rifle to off (Hallelujah! I finally

remembered to do that), and the excitement grew within me. The farthest deer stepped onto the logging road; it was a doe (illegal to shoot), but when the other deer stepped onto the road and lowered its head to graze I saw that it had a huge set of antlers (a buck, legal to shoot). My excitement swelled to a point almost beyond my control. My heart was beating so hard I thought it would burst through my chest and jangle around on the outside. With trembling arms I slowly raised my rifle to pick up the buck in the telescopic sight. I couldn't locate it. I lowered the rifle and sighted the deer over the top of the scope, and raised the rifle again. I could see nothing. A blank wall! I knew instantly that the pressure of the blood pounding through my head had shattered the blood vessels in my eye—blinding me. "Oh no," I moaned softly and lowered the rifle. And there was the deer; I could see again! I glanced at the scope and found that I had frosted the glass eyepiece with my breath while sighting at the deer, and therefore couldn't see through the scope. "You dumb \*#!&\*!," I screamed silently at myself and tried frantically to scrape the frost off the glass. I glanced at the deer to see if I had been spotted yet. It had taken a step further on the road, and I saw that it had lost its horns! "Good grief—how is that possible?" I searched the ground around it to see where they might have fallen off—no horns. Slowly I realized that it wasn't a buck at all; it had never been a buck. The background of branches and my wishful thinking had led me to "see" antlers on the deer. A minute ago I thought I had lost my sight; now I **knew** I had lost my mind.

Crestfallen, I settled down to watch the deer. My "buck" was grazing, and I realized she was coming right toward me. I remained as a rock—



motionless. I became uneasy when deer got so close I thought it would start nibbling on my toes. Then she saw me. The shock of recognition was like a blow to her, and she literally staggered back a few steps jerking her head up, and then froze—eyes wide, nerves tense. "Come on," I said silently to her, "I know I'm ugly but that kind of reaction is ridiculous."

She raised one foreleg and stamped the ground with unbelievable force. I could feel the vibrations. The other deer, now obviously the offspring because it was slightly smaller, looked up at its mother in front of me and then looked around to find the danger. It didn't spot me. The stamping of the ground was a signal of danger, and the doe continued doing it.

I looked deep into her eyes and felt I could read her mind. Like a housewife, frightened at finding a stranger in her kitchen, the doe was telling me (emphasizing certain words with a stamp of her foot),

(Please see page 7)

## recreationotes . . . Carbide bowling

### Y-12 C. . .

The Rounders have lead the Y-12 "C" League for the past three weeks in a row. The Sunflowers are just 21-2 games behind them. Bob Carmack continues to hold his lead on high handicap series with 716.

### Carbide Shifters Mixed. . .

The 2 + 2 lead the Carbide Shifters League by four points over Ups & Downs. Sam Babb continues to hold the season high scratch series of 563 for the men. Bobbie Loving holds the same record for women with 565.

### Y-12 Classic. . .

The lead in the Y-12 Classic League is held by the Has Beens by one game. The All-Stars moved up to second last week winning four points. Bill Ladd won all the weekly awards rolling a 257/264 game with a 676/697 series.

### ORNL "A". . .

The Woodchoppers are leading by one point over ORAU in the ORNL "A" League. Wood, of the Woodchoppers, won high scratch game of the week with a 232. Wood's series helped the Woodchoppers receive high series with handicap rolling a 2993.

### ORNL "C". . .

The Beryls moved up from third place last week to take the lead in the ORNL "C" League. Virgil Johnson, of the Damagers, rolled the high scratch game with a 221. M. Anderson, of the Alley Rads, won high series with handicap rolling a 669.

### ORGDP Women's. . .

The Uptowners have held their lead in the ORGDP Women's League over the Payoffs for the past two weeks. Doris McKamey was this week's "Bowler of the Week" rolling a 223-211-209=643 handicap series. Mary Foley won high scratch series rolling a 545.

### Carbide Family Mixed. . .

The Oops have held the lead in the Family Mixed League for the past two weeks. Tillie Plaza rolled the high scratch series of 528 for women. Ted Burger had a 571 high scratch series for men.

### Western Plaza Mixed. . .

The Roadrunners are in first place with a four game lead. However, second place is up for grabs, with a three-way tie between the Four Eagles, Bowlderdash, and Hi-Lo's. Hershell Johnson turned in an impressive 691 handicap series to take first place in that category. Hershell's team, the Four Eagles, put together a scratch series of 1985 to capture first place for scratch team series. Nice bowling Eagles.

### UCC Mixed. . .

The Lickety Splits continue to hold their lead in the U. C. C. Mixed League. Winnie Woody rolled a 532/631 series last week, while Jerry Cooper rolled a 198-191-196=585/687 series.

### K-25 Tuesday Men's. . .

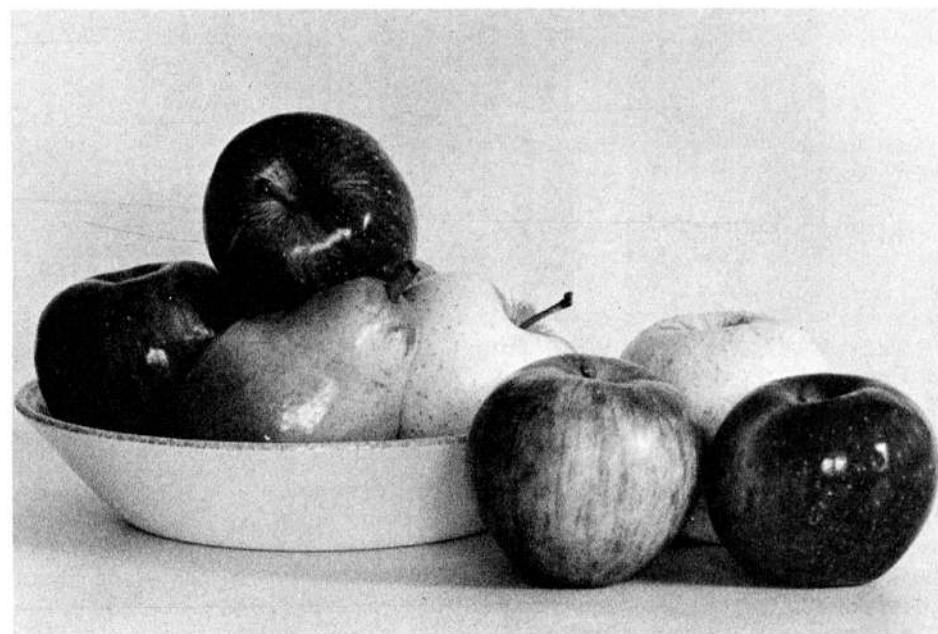
The City Slickers hold their lead by only 21-2 points over the All Stars in the K-25 Tuesday Men's League. J. H. Peer won the weekly scratch game award with a 225. M. N. Strickland won the scratch series award rolling a 576.

### K-25 Wednesday Men's. . .

The Protectors continue to lead the K-25 Wednesday Men's League over Sues-Sooners. Clarence Hamilton, of the Losers, won weekly prizes with a 257 scratch/639 handicap series. Sam Babb, also from the Losers, continues to hold the season scratch game with 270.

### ORNL Ladies. . .

The Mousechasers continue to hold a strong lead over the Avengers in the ORNL Ladies League. Georgia Gwinn, of the Mousechasers, won the weekly high prizes with a 209/237 game; 551/635 series.



Apples and Pear — by Carole Sue Richter

### Carbide Skeet League. . .

John Basler, of ORNL, won first place in the Carbide Skeet League during February. Basler shot a 49.181 with no penalties. Carl Brewster, Y-12, was second with a 48.560. Roy Hicks, ORNL, came in third shooting a 48.080.

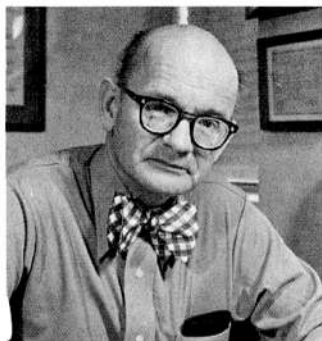
### PHOTOGRAPHIC SALON

The Carbide Camera Club's 1978 Salon will be on display at the Oak Ridge Museum of Atomic Energy from April 2-30. Slides and prints, in both color and black and white will be judged. Winners will be shown in upcoming issues. The Salon's hours are the same as the Museum's.



# medicine chest

by T. A. Lincoln, M.D.



(Editor's Note: Dr. Lincoln alternates his regular column with "Medicine Chest," where he answers questions from employees concerning health matters. Questions are handled in strict confidence, as they are handled in our "Question Box." Address your question to "Medicine Chest," Nuclear Division News, Building 9704-2, Mail Stop 20, or call the news editor in your plant.)

**QUESTION:** "I had a hysterectomy and was found to have cancer of the uterus. Radiation treatments were recommended. Please comment on how successful these treatments are."

**ANSWER:** The prognosis in cancer of the uterus depends on the pathological characteristics of the tumor. Its degree of differentiation is of great importance. An undifferentiated tumor is generally highly malignant and more likely to invade healthy adjacent tissues and to spread to distant locations.

A cancer which is still located superficially on the lining of the uterus (called endometrium) is called a Stage I cancer. It has a better prognosis than one which has already invaded the muscles (Stage II). When the cancer has already extended beyond the uterus to adjacent or distant structures (Stage III or IV), the prognosis is much worse.

## Stage at discovery

A basic difficulty in determining the success of any type of cancer treatment is the degree of accuracy in the staging of the cancer before any treatment decision is made. To properly stage (classify) a cancer, the treatment team needs to know exactly where it is located, its degree of penetration and spread, as well as the fundamental aggressiveness of the cancer cells.

Determining all these factors accurately is difficult. A careful physical examination alone is not sufficient except in advanced cases. Some estimate of the degree of malignancy of the cancer cells and their penetration into the wall of the uterus is possible when the pathologist examines the scrapings of the lining of the uterus. These tissue samples are obtained during the surgical diagnostic procedure called a D&C (dilatation and curettage). At best, however, the precision of the pathological assessment of the cancer by this method is only modestly good.

Because of the above difficulties, Dr. George Lewis and his associates at the Jefferson Medical College in Philadelphia, the Hershey Medical Center in Hershey, Pa., and the Roswell Park Memorial Institute in Buffalo, N.Y., have concluded that proper staging requires surgery. In almost all cases, the uterus is eventually removed anyway following a positive biopsy obtained during a D&C. By meticulous microscopic study of the uterus, ovaries and fallopian tubes which have been removed, the pathologist can more precisely stage the cancer.

## Radium cylinder

Dr. Lewis and associates studied 710 patients who were thought to have only Stage I disease on the basis of the D&C. One hundred thirty-six of them were found to have extension beyond the uterus at the time of surgery. When they looked at the end results of treatment of those who were truly Stage I, they could find no statistically significant benefit from intracavitary radiation before surgery. This technique involves inserting a cylinder containing radium into the cavity of the uterus to radiate the cancer cells before any surgery was performed. The hope of this technique was to prevent spread of cancer cells during surgery. They found that the four year cure rate, either with or without radiation for true Stage I disease, was essentially 85 percent. Patients who had a well differentiated lesion at the time of the D&C had a probability of survival of 90 percent or better with surgery alone.

In some locations, external radiation is used before the uterus is removed. If the cancer is Stage I, it appears to offer little improvement in prognosis. When Stage II or above involvement is present, intracavitary radium applications seem to control local spread the best. Failures due to distant spread are approximately the same whether external radiation or radium or both are used. They all appear to be better than no radiation at all.

Radiation therapy damages surrounding structures and can lead to many unpleasant complications. There is still much conflict among radiotherapists as to what the best approach should be. Most studies show that patients whose cancers have penetrated deeply into the muscle of the uterus or who show extensions into the vagina benefit from postoperative radiation, whether it be supervoltage external beams (X or gamma ray), radiation or intravaginal radium therapy, or both.

## An older disease

Cancer of the uterus is the most frequent invasive cancer of the female genital tract and affects mainly women in the sixth and seventh decades of life. Its peak incidence occurs between the ages of 65 to 69 years of age. Twenty percent of cases occur between the ages of 40 to 50. Women who have a late menopause, obesity, diabetes, high blood pressure, have never had any children or have taken estrogens

# about people...



Long



Jolley

**Hugh M. Long**, manager of the Electric Energy Systems Program, ORNL Energy Division, received the Ben S. Gilmer Award for his outstanding technical contributions from the Auburn University Alumni Engineering Council.

Long joined Carbide's Linde Division in 1953 where he worked until joining the Nuclear Division in 1970. He has worked as a senior research physicist, cryophysics consultant, as well as program manager.

**Robert L. Jolley**, a member of the Chemical Technology Division at ORNL, has been appointed to the National Research Council's Committee on Chemistry of Disinfectants and Products, a subcommittee of the Council's Safe Drinking Water Committee.

The group's task is to advise the U.S. Environmental Protection Agency on the chemical aspects of various disinfectants used to control pathogens in drinking water (particularly chloramines, chlorine dioxide, ozone, bormine, and iodine.) By-products of their reaction with normal constituents of water are of particular interest, since some may be toxic when ingested over long periods of time.

**James C. Fuscoe**, a National Cancer Institute predoctoral fellow in the University of Tennessee-Oak Ridge Graduate School of Biomedical Sciences, has received the 1978 Environmental Mutagen Society Travel Award. The award annually provides funding to students with the potential of making significant contributions in the area of mutagenesis research, to allow them to participate in the Society's annual meeting.

Fuscoe, who holds a B.S. degree in biology from San Diego State University, is working in ORNL's Biology Division on problems in environmental mutagenesis—the induction of mutations in organisms by chemical or physical agents in the environment.

## Savings Plan-Personal Investment Account

	Fixed Income Fund	UCC Stock	Equity Investment Fund
December 75	11.9880	58.7886	7.8231
December 76	13.0553	59.2723	8.8166
December 77	14.2017	40.9096	8.0427
January 78	14.3033	39.4015	7.5433
February 78	14.4063	38.4966	7.5072

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 8.85% for 1978. Union Carbide stock values are the average cost of stock purchased during the month plus brokerage charges. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. The price of each unit is determined by dividing the total value of the securities by the number of units in the Fund.

## Bertini strikes again...

(Continued from page 6)

"Who are you? What are you doing here? You don't belong here." A pause, then continuing, "Get out of her. I know your type. Your

before or after the menopause, are at increased risk. They should have a careful pelvic examination at least once a year, and preferably every six months. The Pap test has an accuracy of only 50 to 70 percent in detecting endometrial cancer, but should always be used.

When the diagnosis is made early, the prognosis is excellent. Even with a relatively late diagnosis, aggressive treatment consisting of a hysterectomy, postoperative radiation and, in some cases, chemotherapy, the five year survival rate is encouraging.

intentions are **not** honorable." (Where had I heard that one before?) Then, tentatively, she put her head down and began to circle me. After about ten steps she jerked upright and skittered a few steps sideways and looked at me accusingly. "I saw you move. I saw that," she was saying. In fact I had moved—slightly. I had smiled. Then after a few more steps with her nose to the ground she apparently picked up my scent, for she took off at a full run. At the same instant the offspring fled in the opposite direction, only to return about ten minutes later to follow the trail its mother had taken. It didn't even see me, nor did I see any other deer that season (as usual). But, as the old Indian saying goes, "Mu hatme googin so-ahso meg saa." (I'll get the so-and-so next year.)

(To be continued)



# Credit unions report year of tremendous expansions

With assets in excess of \$100 million, the four credit unions in the Nuclear Division staged annual meetings bring the full membership into the running of affairs. New officers were elected, dividends declared, and, in some cases, interest rebates were given.

Following is a capsule of news from all four of the credit groups:

With assets near \$52 million, the ORNL Credit Union ended another year of super-growth. Named to the board were Dvon Brogan, Robert Farnham, Roy Pruett and John Dougherty. The new credit committee officers include Darrell Copeland, Joy Huffstetler, Brena Stevens and Frank Mary.

ORNL has announced the opening of another branch office, this one in Kingston. Two other branches exist in Knox County.

With more than 500 attending the annual meeting, Dan Jenkins, Mary E. Carr and Charles J. Barton Sr. were awarded \$100 bills. Several others won \$50 and \$20 cash prizes. A total of

\$900 went to the members in attendance.

\*\*\*

The Paducah Plant Federal Credit Union, with assets past the \$6 million mark, reported loans increasing by 23 percent in 1977. An interest refund of 15 percent to borrowing members was declared by the board of directors.

Harold L. Howell was elected to chair the board of directors, with John W. Hornsby as vice chairman and Billy W. Etter as secretary-treasurer. The remaining directors include Jesse M. Knott, Morris F. Shelton, Charles Burdette and Jo Grisham. The newly elected credit committee consists of James E. Wilkins, Kenneth Owens and James C. Watkins.

W. B. Ford captured the \$100 door prize, with 20 other lucky members taking \$20 each.

\*\*\*

Another successful year was ended by the K-25 Credit Union, with assets totalling more than \$10 million.

H. E. Williams was elected to a new post on the credit committee with no changes in the board of directors.

H. G. Stanley took the top door prize....a color television set. The dividend on shares was raised to 6.5 percent.

\*\*\*

The big news, of course, from Y-12's Credit Union was the completion of a new building on Lafayette in Oak Ridge...five stories of metal and glass, for present and future expansion.

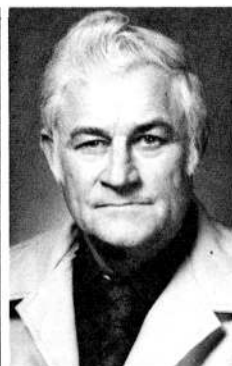
Named new directors were Jerry Davis, Dave Schultz and E. O. Jenkins. Paul Wiser was re-elected to the credit committee.

Assets for the Y-12 credit organization now total more than \$32 million.

## retirements...



David L. Stoddard  
Engineering, ORGDP  
21 years service



William C. Lisenbee  
ORGDP Maintenance  
33 years service



Martin L. Gardner  
Y-12 Stores  
26 years service



Loyd R. Gitgood  
Instrumentation and  
Controls, ORNL  
26 years service



Arville R. Flynn  
Laboratory Operations  
Y-12  
32 years service



Benson W. Garrett  
Beta 2 Chemistry  
Y-12  
25 years service



Fred Vaughn  
Dimensional Inspection  
Y-12  
27 years service



Oliver Smelcher  
Fabrication Division  
Y-12  
30 years service

Emma Jordan (Mrs. John R.) took the top door prize at the annual meeting....a trip for two to Hawaii.

An open house for members will be staged Saturday, April 1, from 10 a.m. until 4 p.m. Another vacation to Hawaii for two will be offered as a door prize. You must be present to win. Refreshments will be served as members inspect their new building.



Ralph C. Trout  
Y-12 Process  
Maintenance  
28 years service



Edith W. Garnett  
Paducah  
Finance & Budget

## safety scoreboard

Time worked without a lost-time accident through March 23.

Paducah .....	244 Days	3,151,000 Man-Hours
ORGDP .....	23 Days	754,000 Man Hours
Y-12 Plant .....	34 Days	939,000 Man-Hours
ORNL .....	67 Days	1,468,646 Man-Hours



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NUCLEAR DIVISION

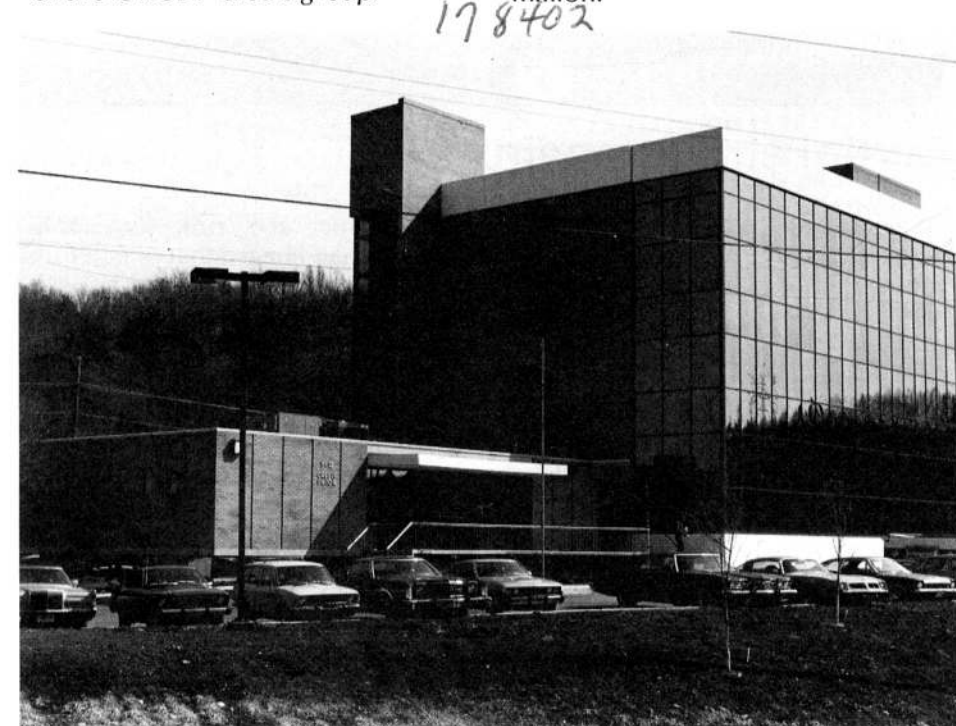
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COLOR TV—H. G. Stanley, right, won a color television set at the K-25 Credit Union annual meeting. He accepts congratulations from Louis Atherton, assistant manager of the ORGDP credit group.



HANDSOME STRUCTURE—Y-12 Credit Union's handsome building graces Lafayette Drive in Oak Ridge. The four Nuclear Division credit unions now boast assets of more than \$100 million in their credit unions. All four reported successful operations in their annual meetings held recently.